**INTRODUCTION:**

Naval Air Station Whiting Field (NASWF) is located eight miles north of Milton, Florida in Northwest Florida. The mission of NAS Whiting Field is to provide and support initial fixed wing and rotary wing student pilot training to the United States Navy, Marine Corps, Coast Guard and allies of the United States. In order to accomplish this mission, NASWF currently employs 3,035 military, civilian and contract personnel. The direct economic impact of NASWF to the local economy is $501 million dollars with an indirect impact of $1.2 Billion dollars. The total acreage of NASWF is 5058 acres in size with an additional 8358 acres divided among thirteen (13) outlying landing fields and other properties that support the Navy mission.

Two separate and fully operational airfields are located at NAS Whiting Field; one for helicopter and one for fixed wing operations. In addition, 13 Navy Outlying Landing Fields (NOLFs) are part of the NASWF complex and are spread along the western panhandle of Florida and southern Alabama. The capabilities of NASWF are critical to the Navy flight training mission; between FY 2013 and FY 2015 over 3.3 million flight operations and 600,000 flight hours were logged. Naval Air Station Whiting Field is responsible for 15% of Navy flight hours (world-wide) and 10% of Navy/Marine and Coast Guard Flight hours (world-wide).

Although economic and cultural development of Milton, Florida can be traced back to the 1800's, Milton's growth as a city was expanded with the commissioning of the installation on 16 July 1943, fulfilling pilot training demands of World War II. Milton's current population as of the estimated 2014 census places it as 9,445.

A strong military, cultural and historic presence has created a spirit of unity and collaboration between NASWF and the regional population. This is largely attributed to a large military presence and the installation's proximate location to Naval Air Station Pensacola to the south and Eglin Air Force Base to the east. The location of NASWF and its outlying fields that span across two states and five counties provide a gateway in building strong community bonds

**BACKGROUND:**

Organization/Staffing:

As of FY 2017, NASWF Environmental Division staffing consisted of one (1) Environmental Director with Environmental Division oversight and Installation Restoration management of

facilities on site, two (2) Physical Scientist's (Clean Water Act, Safe Drinking Water Act, Clean Air Act, Hazardous and Solid Waste and National Environmental Policy Act), one (1) Environmental Protection Specialist (Hazardous, Solid Waste, Emergency Planning and Community Right-To-Know Act, Aboveground Storage Tanks and EMS), one (1) Materials Handler and one (1) Natural Resource Manager (Forestry Operations, Integrated Natural Resources, Integrated Cultural Resources and Pest Management). In addition, there were six (6) Student Conservation Association (SCA) associates that served on our team since FY 2013, providing over 3200 hours of man-hours.

NASWF Environmental Division prides itself on having all environmental media managers cross-trained to perform each other's job duties. This best practice has enabled us to provide greater oversight and improved our ability to provide the appropriate corrective action.

Listing of Relevant Committees, Boards, and Memberships:

Blackwater River Liaison Panel
Clean Marina Program
Earth Day Celebrations-NASWF
Department of Defense/Florida Department of Environmental Protection Partnering Team
Gulf Coast Plains Ecosystem Partnership
Florida Department of Environmental Protection (FDEP) Installation Restoration (IR) Partnering Team
Storm water Environmental Action Team (SWEAT)
Student Conservation Association (SCA) Internships

Significant Environmental Plans and Agreements:

Integrated Solid Waste Management Plan (July 2013)
Storm Water Pollution Prevention Plan (October 2016)
Hazardous Waste Contingency Plan (August 2014)

## SUMMARY OF ACCOMPLISHMENTS:

### Alternative Energy:

NASWF, in coordination with the Secretary of Navy's Renewable Energy Program Office, finalized an agreement with Gulf Power Company to construct a 305 acre intermittent solar farm located on NOLF Holley which will provide fifty-two (52) megawatts of electricity. This project will play a major role in meeting the Secretary of the Navy's strategy for a one giga-watt metric in renewable energy.

Gulf Power will own and develop the on-base renewable energy asset that will feed into the pre-existing Gulf Power energy grid for off-base consumption. In exchange for the development of NOLF Holley, Gulf Power will provide all necessary electrical upgrades to the site, and in the event of a manmade or natural disaster, Gulf Power will allow power generated

on-site to be routed for emergency service and disaster relief efforts. NOLF Holley serves as one of three sites in the Northwest Florida Region. These three solar projects have the potential to produce enough energy to power approximately 18,000 homes for one year. As a result of this partnership with Gulf Power, NASWF will receive a new electrical feeder project will replace pre-existing single phase line entering from the west of the base with a three phase line which will increase base resilience with regards to energy security. NOLF Holley is an integral part of the Department of Navy (DON) strategic planning requirement to produce 50% of its shore-based energy from alternative sources by 2020. The NOLF Holley renewable energy project will account for over 10% of the alternative energy procurement goal of 500 megawatts produced by the United States Navy by December 2016.

NASWF has also constructed two 15kW photovoltaic electric vehicle charging stations. These alternative fuel stations have been strategically located, one at North Field and one at South Field. Each charging station is capable of charging 5 electric vehicles simultaneously. When electric vehicles are not present for charging, the energy is transferred into the electrical grid.

**Safe Drinking Water Act:**

Public Works awarded a $9.8M Utility Energy Savings Contract (UESC) to Gulf Power in August 2016 that includes nearly $400K in water conservation measures in multiple facilities throughout the installation. These measures include installing low flow shower heads and water closets in 192 rooms in the Navy Gateway Inn and Suites (NGIS) and low flow fixtures in 25 rooms of the Child Development Center. The project will reduce the installation's overall water consumption by 2,554 kGal/yr.

In 2016 Lead and Copper sampling was reduced from twenty (20) to ten (10) sampling locations as Naval Air Station Whiting Field has experienced no Lead and Copper exceedances for the last three years. Due to the quality of the water provided, the Florida Department of Environmental Protection (FDEP) agreed to the sample reduction. This saw a reduction in sampling cost and regulatory complexity.

Ten ELKAY EZH20 Bottle Filling stations have been installed on Naval Air Station Whiting Field in order to facilitate the increasing desire for a population that prefers bottled water. In this case the system allows base personnel to fill water bottles with cool, filtered water, minimizing the dependency on disposable water bottles and minimizing the risk of bacterial accumulation on faucet heads. The system also decreases the amount of water wasted due to the direct injection of filtered water within the user's bottle. The system also shows the user when the filtration needs to be replaced and how many disposable plastic bottles have been prevented from being used. This initiative alone is responsible for the solid waste diversion of 225,292 plastic bottles across the installation annually.

Initial maintenance of the South Well showed that the well pump would need to be replaced and Executive Order 13693 would require Public Works Department staff to reduce water consumption and increase efficiency of the system. During the initial well-pump

calculations a modern 40 hp pump could outperform the original 60 hp system. Final pump tests show that the 40 hp pump runs at 370 gpm as opposed to the 60 hp pump which produced 310 gpm. The installation of this new well pump provides the same quantity of water while using less electricity.

The closure of the NASWF Golf Course in December 2015 was necessary to provide limited access to the base under the requirements of Force Protection and to conserve funds. While the Golf Course Building remains open as a restaurant, the surrounding Golf Course was allowed to grow back to native grassland until a more thorough site determination can be made as to its use. Until this determination is made, non-potable water use on the site has been restricted to less than 1% of the water used in 2014. The two wells (each permitted at 187,200 gpd) are still operational and although they do not provide potable water, they still gather water from the same economic source that provides drinking water for the rest of the base. As of December 2016 the utilization of herbicide and insecticide has been halted with plant growth being controlled through mechanical, vice chemical means. Although this is a conservation effort it remains as an opportunity for the Department of Navy to provide planners with future designs on the site that do not require large scale watering operations.

Water operators exchanged eight (8) steel hydrants with eight (8) resistant seat hydrants which provide for a tighter valve assembly. This will allow system operators to replace and repair systems more efficiently as the older systems had parts that were harder to obtain. This helps reduce the final cost of repairs and aids in the prevention of external leaking when the main valve is open.

The utilization of Geo-sonic Drill Rig for the Installation Restoration (IR) groundwater survey on NASWF was selected with sustainability in mind because it requires less water for drilling. The Geo-sonic Drill Rig reduces the amount of potable water used and the amount of solid waste produced. (two 55-gallon drums vs. eight 55-gallon drums for rotary drilling).

**Sustainable Design:**

Water reduction on NASWF also involves initial design and final construction of new buildings. On 19 March 2015 a project designed in-house for NASWF was awarded Leadership in Energy and Environmental Design (LEED) Silver certification as established by the U.S. Green Building Council (USGBC) and verified by the Green Building Certification Institute (GBCI). LEED Silver certification of the Joint Primary Aircraft Training System (JPATS) Training OPS Paraloft facility was based on a number of green design and construction features that positively impact the project itself and the broader community. The building design will see a reduction in water usage of 30% percent while at the same time providing students and trainers a larger and more efficient building.

The UESC project has identified a number of opportunities in 66 facilities to improve energy efficiencies at NASWF through energy conservation measures that significantly reduce energy costs and greenhouse gas emissions as well as increase reliability and lighting quality. The project will be replacing existing fluorescent, high pressure sodium, and metal halide lighting with LEDs, resulting in an annual savings of $202k. This project will save $19K per

year by replacing 23 existing low voltage dry type transformers with high efficiency transformers. The installation of a virtual chiller loop at the simulator training complex as part of the UESC will reap $77K in annual savings.

NASWF completed a LED street lighting project in July 2015. NASWF street lights are now 90% LED providing brighter lighting with a reduction in the amount of energy utilized.

**Sustainable Achievement:**

NASWF was awarded the SECNAV Gold Level of Achievement for its energy and water management program in 2014. In 2015 potable water consumption was reduced by 43%. Investments in future electrical consumption goals are being guided by the installation of over 140 street and parking lot lights with high efficiency LED fixtures. Proactive measures have included the replacement of inefficient high bay lighting fixtures in the Mid-Field Hangar with fluorescent lighting fixtures operated by occupancy sensors and replacement of one 200 kW diesel standby generator at the West Water Well with a 150 kW natural gas standby generator.

**Training and Outreach:**

A proactive measure to communicate the importance of energy and water conservation was one of the primary goals of the newly hired Installation Energy Manager in 2015. A Leadership in Energy and Environmental Design (LEED) trailer was incorporated into the Energy Awareness and 5K Run Day on Naval Air Station Whiting Field (NASWF). The trailer presented topics on low flow urinals and showers for domestic water use, solar thermal energy collectors, geothermal energy, LED's and provided base staff with visual and hard-copy information to include demonstrations of the topics via interactive exercises within the trailer. Earth Day 2016 on NASWF provided an opportunity for both Installation Energy Management and Environmental to work towards an even loftier goal. Obtaining one of three "BRITE" suits, the energy mascot for the Department of Navy's Energy Conservation Program, BRITE was presented to children and staff at the base Child Development Center. Children were excited to learn about water conservation and its role in planting flowers and the role the sun has in solar energy.

From 2011-2016 NASWF has applied for and won the Plant Operations Excellence Awards for Small Community Public Water Supply Facilities. The program is judged by the Florida Department of Environmental Protection (FDEP) on lack of regulatory deficiencies, water quality, community outreach, operations and maintenance, the use of new technologies and the use of sustainable processes. The site is supplied by three groundwater wells that first go through individual granulated activated carbon filtration systems that absorb and remove natural organic compounds, taste and odor compounds, and synthetic organic chemicals. The water is than chemically treated for pH neutralization, fluoridation, corrosion control and bacterial disinfection by chlorine. The addition of Aqua-Mag to the treatment process also acts as a phosphate corrosion inhibitor and inhibits lead and copper leaching which results in lower lead and copper levels in delivered potable water.

Environmental Management Training is performed on a weekly basis to new flight trainees. As of December 2016 over 2399 student trainees have received instruction. The

program also provides training which emphasizes the military mission with regards to the Environmental Management System, Clean Air Act, Resource Conservation and Recovery Act, Clean Water Act, Safe Drinking Water Act, EMS 14001, National Environmental Policy Act, Hazardous Materials Management and Natural Resources. The purpose of such training is to provide young military officers an education in environmental awareness as well as highlighting their responsibilities in contributing to a safe and clean environment; a lesson that is meant to build a foundation that can be carried forward throughout their personal and military careers.

Our Storm water Environmental Action Team (SWEAT) meets bimonthly and provides NASWF personnel with presentations on the current environmental health of the base, including information on existing and upcoming regulatory concerns that impact base tenants. Subjects are introduced by environmental staff members using a combination of relevant video, power-point and classroom demonstrations.

Student Conservation Association (SCA) an efficient training model, gathers both new and experienced students from across the country including local institutions such as the University of Florida's Milton Campus and the University of West Florida. These personnel are tutored by our experienced professional's within the Public Works Department in the areas of Forestry, Burn Operations, Flora and Fauna Surveys, Threated and Endangered Species, Silviculture and Training Area Management. Over the last two years, seven students have taken part in the program, supporting >3200 hours of man-hours attributing to 441 acres of controlled burns.

NASWF Environmental Division is also an active member of the FDEP Partnering Team Meetings. The venues allow for open discussions between FDEP, NASWF, public and government stakeholders in addressing concerns and questions of new regulations and compliance challenges providing a framework for success in environmental stewardship and behaviors.

**Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP):**

In an effort to minimize the amount of hazardous materials that are used by the fleet; decision-making on the part of contractors such as the L3 Communications (TH-57 Bell Helicopter) switched to a non-chromate paint and primer for use on our fleet of 120 TH-57 training aircraft. The removal of such a products falls under part of the decision making process found in the CHRIMP process, efforts removed a toxic metal from the waste stream that was produced in performing touch-up work on aircraft. The product that is currently used by Bell Aircraft when providing primer and paint to the TH-57 is already in used by the US Army (NSN 8010-01-555-3386), contributing to increased efficiencies related to ordering a pre-existing product in the DOD system.

The utilization of biodegradable soap to conduct wash downs on our 140 plus T-6 B II aircraft by DynCorp International has reduced the level of corrosion on aircraft wheel rims. Prior to the use of this new product, wheel rims had to be stripped, painted, primed and painted on a more consistent basis. This change has increased operational readiness and maintenance

turnaround times. Another result was a reduction in overall costs through a reduction in maintenance man hours to correct erosion and decreased material costs to keep up with stripping, painting and waste disposal.